

CLAIMS

What is claimed is:

1. A multi-band antenna system, comprising:  
a dipole antenna;  
transmission means having a first end coupled to the dipole antenna; and  
a reactive circuit coupled between a second end of the transmission means and a PC Card wireless modem,  
wherein the reactive circuit is configured to operate as a trap for received signals having frequencies within a first frequency band.
2. The multi-band antenna system of Claim 1 wherein the dipole is configured to receive signals having frequencies within a second frequency band.
3. The multi-band antenna system of Claim 2 wherein the first frequency band corresponds to the CDMA 0.86 GHz band and the second frequency band corresponds to the PCS 1.92 GHz band.
4. The multi-band antenna system of Claim 1 wherein a ground plane of a printed circuit board of the PC Card wireless modem and/or a conductive housing of the PC Card wireless modem functions as a counterpoise for the antenna apparatus..

5. The multi-band antenna system of Claim 4 wherein combined lengths of a pole of the dipole antenna and a portion of the transmission means operate as a monopole antenna for received signals having frequencies within the first frequency band.

6. The multi-band antenna system of Claim 1, further comprising a matching circuit coupled between first and second poles of the dipole antenna.

7. The multi-band antenna system of Claim 6 wherein said matching circuit is further configured to operate as a balun.

8. The multi-band antenna system of Claim 6 wherein the matching circuit, the dipole, and a portion of the transmission means are formed on a first printed circuit board.

9. The multi-band antenna system of Claim 1 wherein the reactive circuit is formed on a printed circuit board.

10. The multi-band antenna system of Claim 8 wherein the reactive circuit is formed on a second printed circuit board.

11. The multi-band antenna system of Claim 1, further comprising a diversity dipole.

12. The multi-band antenna system of Claim 9, further comprising a diversity dipole.

13. The multi-band antenna system of Claim 12 wherein the diversity dipole is formed on the printed circuit board.

14. The multi-band antenna system of Claim 10, further comprising a diversity dipole.

15. The multi-band antenna system of Claim 14 wherein the diversity dipole is formed on the second printed circuit board.

16. A multi-band antenna system for a portable communications device, comprising:

a dipole antenna;

transmission means having a first end coupled to the dipole antenna; and

a reactive circuit coupled between a second end of the transmission means and the portable communications device,

wherein the reactive circuit is configured to operate as a trap for received signals having frequencies within a first frequency band.

17. The multi-band antenna system of Claim 16 wherein combined lengths of a pole of the dipole antenna, and a portion of the transmission means form a whip antenna capable of receiving signals having frequencies within the first frequency band.

18. The multi-band antenna system of Claim 16 wherein the dipole antenna is configured to receive signals having frequencies within a second frequency band.

19. The multi-band antenna system of Claim 18 wherein the first frequency band corresponds to the CDMA 0.86 GHz band and the second frequency band corresponds to the PCS 1.92 GHz band.

20. The multi-band antenna system of Claim 16 wherein the portable communications device comprises a PC Card wireless modem.

21. The multi-band antenna system of Claim 20 wherein a ground plane of a printed circuit board of the PC Card wireless modem and/or a conductive housing of the PC Card wireless modem functions as a counterpoise for the antenna apparatus.

22. The multi-band antenna system of Claim 16, further comprising a matching circuit coupled between first and second poles of the dipole antenna.

23. The multi-band antenna system of Claim 22 wherein said matching circuit is further configured to operate as a balun.

24. The multi-band antenna system of Claim 22 wherein the matching circuit, the dipole, and a portion of the transmission means are formed on a first printed circuit board.

25. The multi-band antenna system of Claim 16 wherein the reactive circuit is formed on a printed circuit board.

26. The multi-band antenna system of Claim 24 wherein the reactive circuit is formed on a second printed circuit board.

27. The multi-band antenna system of Claim 16, further comprising a diversity dipole.

28. The multi-band antenna system of Claim 25, further comprising a diversity dipole.

29. The multi-band antenna system of Claim 28 wherein the diversity dipole is formed on the printed circuit board.

30. The multi-band antenna system of Claim 26, further comprising a diversity dipole.

31. The multi-band antenna system of Claim 30 wherein the diversity dipole is formed on the second printed circuit board.